

MINUTES
CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC)
MEETING San Bernardino, January 22, 2004

The first CTCDC meeting of year 2004 was held in San Bernardino, on January 22, 2004.

Chairman John Fisher opened the meeting at 9:30 a.m. with the introduction of Committee Members and guests. The following Members, alternates and guests were in attendance:

<u>ATTENDANCE</u>	<u>ORGANIZATION</u>	<u>TELEPHONE</u>
Members (Voting)		
John Fisher Chairman	League of CA Cities City of Los Angeles	(213) 580-1189
Farhad Mansourian Vice Chairman	CA State Association of Counties Marin County	(415) 499-6570
Gerry Meis	Caltrans	(916) 654-4551
John Olejnik (Alternate)	CHP	(916) 657-7222
Ed von Borstel	League of CA Cities City of Modesto	(209) 577-5266
Merry Banks	California State Automobile Association	(415) 241-8904
Jacob Babico	CA State Association of Counties San Bernardino County	(909) 387-8186
Hamid Bahadori	Auto Club of Southern California	(714) 885-2326
<u>ALTERNATES</u>	<u>ORGANIZATION</u>	<u>TELEPHONE</u>
Mark Greenwood	League of CA Cities City of Palm Desert	(760) 776-6450

ATTENDEES

ORGANIZATION

TELEPHONE/E-Mail

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MINUTES

Adoption of September 24, 2003 CTCDC meeting minutes.

Motion: Moved By Farhad Mansourian, seconded by Ed von Borstel, to adopt the Minutes of September 24, 2003 CTCDC meeting held on September 24, 2003 in Sacramento. Motion carried 7-1. Hamid Bahadori abstained, because he was not present in that meeting

Membership

Hamid Bahadori replaced Richard Backus as the Voting Member of the Auto Club of Southern California, and Marie Simon replaced Richard Dilluvio as the Alternate Member of the Auto Club of Southern California. Both Mr. Backus and Mr. Dilluvio have resigned from the Auto Club.

Public Comments: There were none.

Public Hearing:

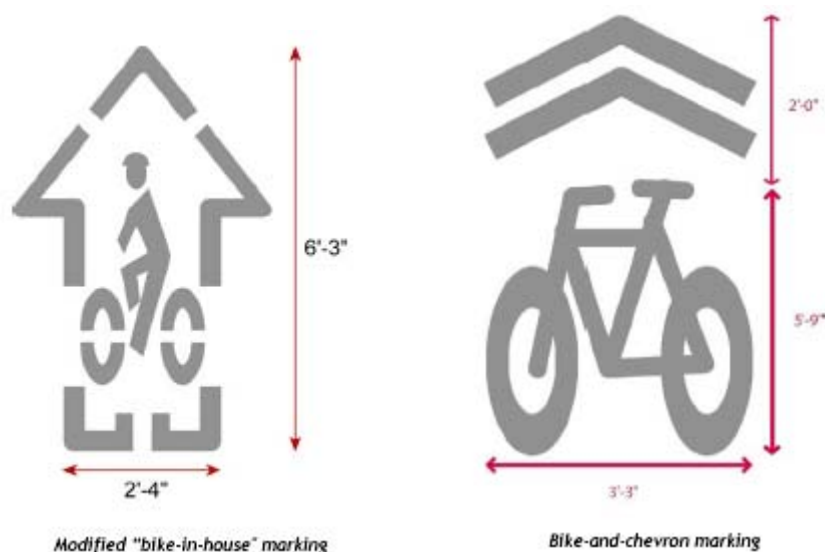
00-1 Bicycle Pavement Markings

Chairman Fisher asked Ed von Borstel to address the agenda item for Bicycle Pavement Markings (BPMs).

Ed noted that the City of San Francisco was authorized to conduct experiments with the BPMs and the City has completed a final report. Ed invited Mia Birk, Alta Planning & Design, to present the findings of the study to the Committee members and audience.

Mia stated that she was hired as a Consultant by the City of San Francisco to undertake technical evaluation of the "shared bicycle pavement marking" on bike routes. Mia mentioned that they have presented an interim report to the Committee during previous meetings and this was the final report and she would share the summary of the report with Committee members.

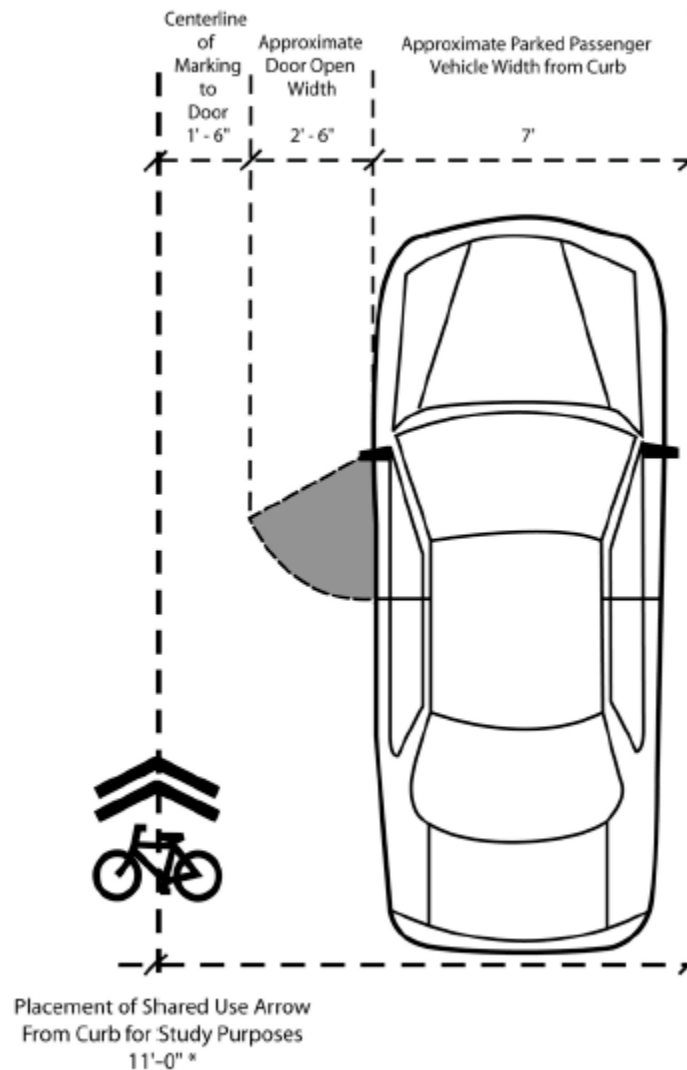
Mia stated that the goal of the BPMs was to improve the position of both motorists and bicyclists on roadways that were designated as bike routes (Class III Bikeways). The Technical Advisory Committee (TAC) formed by the City of San Francisco selected two types of BPMs (see illustration).



Before and After Videotape Analysis – The primary approach used to assess cyclist and driver behavior was a before/after videotape study. In addition, a survey was administered to cyclists and drivers to gauge their perceptions about the effectiveness of the markings. More than 140 hours of video at six locations were recorded and all locations are heavily used bicycle routes for both utilitarian and recreational cyclists. The streets have on site parking and markings were placed so that the centerline of the BPM is 11 feet from the curb, or about 4 feet from parked cars (see illustration).

San Francisco Shared Lane Marking Study

Before-and-After Videotape Analysis



- * This placement is based on the following:
- Average car door opens to 9'6" from curb (per DPT field observations).
 - Average width of bicycles is 2'.
 - 6" clearance from door to bicycle handlebar is desired minimum "shy distance".

Overall, the stencil markings improved both motorists and cyclists positions in the roadway. The markings also reduced sidewalk and wrong-way riding. Overall, the presence of a marking increased the distance of cyclists to parked cars by 8 inches. The effect of each marking was similar. When passing vehicles were present, the markings caused an increase of 3 to 4 inches in the distance between cyclists and parked cars. The markings also caused an increase of over 2 feet in the distance between cyclists and passing vehicles. The bike and chevron had a greater effect on the distance between cyclists and passing vehicles. In the absence of cyclists, both markings had a significant positive effect of about one foot on the distance between passing vehicles and parked cars.

Furthermore, Mia stated that the markings neither increased nor reduced the number of observable hostile behaviors between bicyclists and motorists. Both markings significantly reduced the number of sidewalk riders by about 30%. The bike and chevron marking significantly reduced the number of wrong way riders by 80%. The bike-in-house marking did not have any significant impact on the percentage of wrong-way riders.

The finding of the both markings are summarized in the following table:

Study Issues	Bike-In-House	Bike-and-Chevron
1. Did the marking increase the distance of bicycles from adjacent parked cars?	Yes	Yes
2. Did the marking increase the distance between passing motorists and cyclists?	Yes	Yes
3. Did the marking reduce observable hostile behaviors?	Undetermined	Undetermined
4. Did the marking reduce incidence of sidewalk riding?	Yes	Yes
5. Did the marking reduce incidence of wrong-way riding?	No	No

Mia further added that a survey queried bicyclists and drivers about their perception of the markings. In summary, the survey viewed the markings as a step in the right direction and felt that the markings increased the sense of safety. However, the intended message of the markings was not fully understood. Public information and education might be helpful to convey the message of markings to roadway users. The majority of the drivers surveyed claimed not to notice the markings. Of the drivers that noticed the markings, there was no significant advantage of one marking over the other, but the drivers did not seem to confuse the markings with bike lanes. Of the 105 surveyed cyclists, 76 noticed the markings. When asked the comparison of the two markings, cyclists preferred the bike-and-chevron marking over the bike-in-house marking by a two to one ratio.

Mia noted that the survey also indicated that the cyclists believed the marking indicated that the right lane is a bike lane or bike route. About 15% of the cyclists felt that the marking indicated that bicyclists were allowed full use of the travel lane. Some believed that the marking signified that a bike lane would be installed at the location in the future. Two of the seven motorists understood that the marking indicates that they should allow more room for cyclists.

In closing, Mia stated that at present, there are different cities using different bicycle pavement markings, which leads to confusion. The research has proven that shared lane pavement markings in San Francisco have a positive impact on motorists and cyclist's behavior, position, and safety. These results are similar to 1999 Florida study. Both studies found that such markings significantly reduce wrong-way and sidewalk ridings. The bike-and-chevron marking had a stronger impact on motorists positioning and in reducing wrong-way riding and is preferred by cyclists surveyed. Based on these findings, the City of San Francisco requests the CTCDC to adopt bike-and-chevron marking as an optional marking for Class III bikeways throughout California.

Mia further stated that the City of San Francisco is also in touch with the National Bicycle Advisory Committee (NBAC), and the National Committee would like to discuss results of this study at their June 2004 meeting. Mia asked whether the Committee had any objections to the City releasing this study to NBAC and to other public agencies. Mia added that at this time there is no other companion cities doing studies with the BPMs.

The Committee members unanimously endorsed the request and encouraged the City to contact the National Committee to consider adoption of the BPM for Class III bike routes at the national level.

Chairman Fisher thanked Mia Birk for presenting a very comprehensive report.

Gerry Meis stated that the CTCDC or City of San Francisco should approach the National Committee of Uniform Traffic Control Devices to consider the study conducted by the City of San Francisco and adopt the bike-and-chevron pavement marking at the national level.

Chairman Fisher stated that during the previous meetings he had suggested looking at alternatives to the BPMs, such as, placing stall markings to indicate the location of parked cars and an edge line that would advise cyclists to stay away from parked cars (car dooring).

Mia responded that the City had considered that option and that it did not work. Therefore, the pavement markings were considered for the study.

Hamid Bahadori asked whether any intersection crossing treatments were considered during this study.

Mia responded that no special treatment was considered for intersection crossings.

Chairman Fisher asked Matt Schmitz, Federal Highway Administration (FHWA), whether he would like to add his comments on this study and provide information on how to approach the NCUTCD to consider this report for implementation at the national level.

Matt stated that there is an interim approval process at the federal level and that this may be a good candidate for the process. He emphasized that an adoption of optional pavement markings for the Class III bike routes at the national level would provide uniformity. He suggested that the City and CTCDC consider pursuing this with the NCUTCD.

The Committee members discussed various avenues to elevate this report to the national level for consideration. The Committee members asked Mia whether the City of San Francisco would write a letter to the NCUTCD and request consideration of adoption of the bike-and-chevron BPM at the national level, which would provide uniformity throughout the nation. Meanwhile, members of the CTCDC representing cities and counties will distribute the study report to their counterparts to receive feedback and find out whether California should adopt optional pavement markings for Class III Bikeways as recommended by the City of San Francisco.

Chairman Fisher asked for comments from the audience.

There were none.

Motion: Moved by Farhad Mansourian, seconded by Ed von Borstel, the Committee has received the final report on the bicycle pavement markings. Committee members representing local agencies will distribute the final report and proposed language, which authorizes the use of BPMs as "optional" for Class III Bikeways to their counterparts and ask for feedback. The Chairman of the CTCDC will write a letter to the NCUTCD and ask them to provide feedback. The Committee will consider all comments and feedback received from local agencies and the NCUTCD, then make a decision during the meeting which will follow the May 6 2004 meeting.

Motioned carried 7-1. Gerry Meis voted no, because the Committee agreed to develop proposed language for the NCUTCD and he believes that is not the Committee's responsibility.

Chairman Fisher asked for discussion on the motion.

Farhad Mansourian clarified that he and Jacob Babico will distribute the report and proposed language on BPMs to the California Counties Public Works Directors during their annual meeting in March 2004 and would ask them to provide feedback. Farhad urged his colleagues John Fisher and Ed von Borstel, who represent the League of California Cities, to do the same.

Chairman Fisher and Ed von Borstel agreed to distribute the report and proposed language to the cities.

Matt Schmitz, FHWA, stated that as an observer he noticed that the Committee is asking more and more for public agencies to follow the FHWA experimental process simultaneously with the CTCDC process. This is a positive step toward providing uniformity to road users. He noted that Gerry Meis is not comfortable adopting BPMs in California without having a national standard. If the Committee had asked the City to follow the federal process, then the Committee would not be vulnerable in making a decision. He added that when the Committee does not ask the experimenting agency to follow the federal process, they may be vulnerable from a liability standpoint.

Farhad Mansourian responded that he has asked during previous meetings about a time frame for the federal process. No commitment about timing was given. He further stated that by authorizing experimentation with new traffic control devices, the Committee makes a collective judgement in denying or approving an experiment, therefore eliminating the Committee's liability and vulnerability to the public agency.

Matt pointed out that sometimes the Committee asks the public agency to follow the federal process simultaneously with the California process. In one case the CTCDC approval was contingent and subject to federal approval. He advocated that for every experiment requests the Committee reviews, the Committee may consider asking the public agency to follow the federal process simultaneously.

Chairman Fisher added that he partially agreed with Farhad's concerns, but in his opinion, the federal process in the last few years has improved tremendously.

Action: Item will be placed on the agenda for the meeting that will follow the May 6, 2004 CTCDC meeting.

03-9 Proposal to revise existing SR43 Golf Cart sign

Chairman Fisher asked Jacob Baico to address the agenda item for Golf Cart signing.

Jacob Babico stated that recently the San Bernardino County Board of Supervisors has approved the use of Golf Carts on local streets, southwest of the City of Barstow. The County installed the current sign "Golf Carts OK Daylight Hours." Upon installation of the sign, the homeowner association challenged the County arguing that they are not consistent with the California Vehicle Code (CVC). Jacob pointed out that the CVC Section 21115 allows a local authority, by passing a resolution or ordinance, to designate the highway or portion of the highway for use by Golf Carts during daylight hours. The CVC 2115 further states, if Golf Carts were operated during the hours of darkness, the golf cart shall be subject to the provisions of section 24001.5 regarding equipment.

Jacob added that there is a proposed new sign in the agenda packet, which could be used where golf carts are allowed during the hours of darkness. The message was developed with the help of Gerry Meis's Office. The message on the proposed new sign is, "Golf Carts OK Daylights Hours Only, Unless Equipped Per CVC 24001.5."

Chairman Fisher asked for comments from the Committee Members.

Farhad Mansourian stated that the CVC Section 24001.5 does not state what to do with the golf cart, so it could be driveable during dark hours.

Jacob responded that CVC Section 21115 says that the golf cart shall be subject to the provisions of Section 24001.5 regarding equipment, if operated during the hours of darkness.

Farhad Mansourian and Chairman Fisher stated that Section 24001.5 does not clarify what equipment is required to use the golf cart during the hours of darkness. Section 24001.5 simply says "A golf cart as defined in Section 345

shall only be subject to the provisions of this division which are applicable to a motorcycle.” Farhad added that a supplemental plate to the current sign should be sufficient to allow the use of golf carts during dark hours.

Jacob stated that the sign could make reference to lights, however the message would be lengthy. Section 24001.5 talks about provisions of the division which are applicable to a motorcycle.

Mark Greenwood, alternate member, suggested using the existing sign and developing a supplemental plate “unless equipped per CVC 24001.5.” This supplemental plate can be used where golf carts are allowed during dark hours. Mark added that the City of Palm Desert does not allow the use of golf carts during hours of darkness.

Chairman Fisher asked how you could prohibit the use of golf carts during dark hours, when the vehicle code allows it.

Mark responded that the City uses Streets and Highways Code sections 1950-1961 regarding golf

Cart transportation plans, which allows a local authority through ordinance or resolution to establish rules and regulations.

Chairman Fisher suggested developing a new sign which allows the use of golf carts during nighttime and to modify the existing sign by adding “only” at the end of the current sign.

Chairman Fisher asked for comments from the audience.

There were none.

Motion Moved by Chairman Fisher, seconded by Farhad Mansourian, recommending that Caltrans develop a new sign which allows the use of golf carts during day and nighttime and to modify the current sign by adding the word “only” at the end of the sign.

Motion carried 7-1. John Olejnik abstained. He stated he needs more research on different sections of the vehicle code to find out what types of equipment golf carts need for use during dark hours.

Action: Caltrans will develop a new sign and modify current sign as suggested.

04-1 Proposal to adopt MUTCD 2003 Section 4E.07 Countdown Pedestrian Signals

Chairman Fisher asked Gerry Meis to introduce pedestrian count signal heads (PCSH).

Gerry Meis refreshed the Committee that a number of public agencies are authorized to conduct experiments with PCSHs. Some of them have submitted their report and strongly recommended adopting the device in California. Some of them still collect data. During the June 2003 meeting, the Committee authorized the Chairman to give administrative approval by letter to local agencies requesting authorization to install PCSH. Since the MUTCD 2003 has a policy on PCSHs and is consistent with the Committee’s authorized experimentation, he suggested that the Committee make a recommendation to Caltrans for the adoption of PCSHs in California. Gerry asked the committee members whether the MUTCD language satisfies the need in California. Otherwise, the Committee could recommend different language for use in California.

Chairman Fisher asked for clarification about comments noted in red with the MUTCD language that says, “the countdown should be zero at the end of the Green rather than the Yellow display.”

Gerry Meis responded that the comments are from Caltrans Headquarters Electrical Branch. Gerry asked Devinder Singh to clarify.

Devinder responded that the comments made by Caltrans have been addressed in the last sentence of the MUTCD language under standards. He suggested that since the MUTCD covered the comment, it should be ignored.

Farhad Mansourian asked whether, by adopting the MUTCD language, we are creating any conflict with on-going experiments or with completed experiments? Some agencies include the yellow time in the pedestrian clearance timing. Some agencies end the pedestrian clearing interval at the end of the green phase and some agencies include the "yellow" time. By including the "yellow" time in the pedestrian clearing timing, the agency reduces the overall cycle length.

Jacob also inquired whether adoption of the MUTCD language would have any impact on the devices installed in California.

Chairman Fisher stated that the MUTCD language is clear on the starting and ending of countdown numerals and that is what California should adopt. Those agencies that installed countdown signal heads under experiments were informed during the approval process that they might need to adjust their system when final standards are adopted in California.

John Olejnik asked for clarification whether the countdown will be zero at the end of green phase or if it will include the yellow time. He further added that if the countdown is zero at the end of green phase, then the yellow phase would allow a few extra seconds for pedestrians to clear before the opposing traffic signal turns green.

Chairman Fisher stated that the countdown display is tied with the "flashing upraised hand". The display of numerals starts with the "flashing upraised hand" on and will be zero when the "flashing upraised hand" turns to a steady "upraised hand."

Chairman Fisher asked for comments from the audience.

Matt Schmitz stated that from hearing the different comments, in his opinion, the countdown should not change the methodology for calculating a pedestrian clearance phase. When to start countdown or when to end it should not have any affect on the overall pedestrian clearing phase.

Chairman Fisher asked for other comments.

There were none.

Motion: Moved by Farhad Mansourian, seconded by Merry Banks, it is recommended that Caltrans adopt MUTCD 2003 Section 4E.07 Countdown Pedestrian Signals in California.

Chairman Fisher asked Farhad for an amendment to the motion to adopt Section 4E.10 along with 4E.07, because Section 4E.10 is tied with 4E.07.

Farhad and Merry agreed with the amendment.

Motion carried 8-0.

Action: Caltrans will inform the Committee when final action is taken on this item.

Request for Experimentation

04-2 In-Street Pedestrian Crossing Signs

Chairman Fisher asked Ed von Borstel to introduce item 04-2 pedestrian crossing sign.

Ed informed Committee members that the City of Alameda's representative is not present at the meeting and requested the item to be deferred until the next meeting.

Chairman Fisher noted the MUTCD 2003 includes devices under Section 2B.12 that are similar to the agenda item. He added that the City of Alameda should be advised that Caltrans is in the process of adopting the MUTCD 2003

along with the California Supplement, and that MUTCD Section 2B.12 would be discussed during the CTCDC Workshop. Final action will take place during the next CTCDC meeting.

Discussion Items

99-11 MUTCD Adoption by Caltrans along with the California Supplement

Chairman Fisher asked Gerry Meis to update Committee members and the audience on the adoption of the Federal Manual along with California Supplement.

Gerry Meis stated that Caltrans has been working with the Committee to adopt the MUTCD 2000 along with the California Supplement. During the last month or so, there has been strong opinion from the traffic engineering community that since the MUTCD 2003 is published by the FHWA, the adoption of the MUTCD should be postponed until the MUTCD 2003 can be adopted with the California Supplement. Gerry added that he would like the Committee to make a recommendation to adopt the MUTCD 2003 along the California Supplement. Gerry informed the Committee that a two-day Workshop will be held at the end of March to discuss the MUTCD 2003 version and the California Supplement.

Jacob Babico suggested having one final document instead of two separate documents.

Chairman Fisher and Ed von Borstel also suggested having a single final document.

Gerry Meis responded that to combine the MUTCD and the California Supplement will require considerable extra effort and resources. At this point, the task is to adopt the MUTCD 2003 along with the California Supplement in May 2004. After that, Caltrans will work with the Committee to merge the two documents into a single document if this is reasonably feasible.

Chairman Fisher asked for comments from the audience.

Jerry William, BlinkerStop, asked what the long-term goal is. Would the California Supplement be phased out over a period of time and merged with the MUTCD?

Gerry Meis responded that the ultimate goal is to reduce the California Supplement as much as possible. This would be achieved as we learn more about where duplication exists between the two documents. However in some cases, California law requires devices that are not in the MUTCD. In those cases, a California Supplement may be needed, but over a period of time the California Supplement will likely be reduced in size.

Gordon, Tappco, asked whether other states have a supplement to the National Manual.

Gerry Meis responded that there are number of states that have a supplement to the MUTCD.

Gordon further stated that if a number of states publish a supplement, then FHWA should consider adding the name of the state under the section if a supplement exists for that section.

Chairman Fisher asked Matt to respond.

Matt Schmitz stated that he is open to the idea but he does not see a need for FHWA to add footnotes for those states that have a supplement for a particular section. This may add confusion. Matt further stated that he is involved with the California Supplement development and Caltrans and this Committee are doing an excellent job going through page by page to see where California is not consistent with the National Manual.

David Royer suggested that having one document is a necessity to use properly and efficiently. The task could be achieved by contracting out. He suggested that a contractor could merge the two documents into one-document then charge consumers to make up for the cost. The quality control would need to be verified before final printing. Another issue is the California Supplement notes separate requirements for cities/counties and for the State. There

are highways and freeways under the jurisdiction of local agencies, therefore the standard should be the same. A third issue is the signal chapter contains information on how to prepare a project study report which has nothing to do with local agencies.

Jacob Babico asked whether the task of combining the two documents and printing could be contracted and let the contractor make up his cost from selling the document.

Gerry Meis stated that he is not sure if this can be achieved because of quality control.

Chairman Fisher asked for any other comments.

There were none. The "Workshop" will be held on March 25 and 26, 2004 to discuss the MUTCD 2003 and California Supplement.

04-3 Adoption of MUTCD 2003 Section 2A.08 Retroreflectivity and Illumination

Chairman Fisher asked Gerry Meis to address item 04-3, adoption of the MUTCD 2003 Section 2A.08 Retroreflectivity and Illumination.

Gerry Meis pointed out that the last paragraph of Section 2A.08 under standards allows an agency to use LEDs in any format, such as sign symbols or word messages. This allows the use of LEDs in a wider application than currently used. Caltrans would like Committee members input and opinion on the MUTCD language. This is a discussion item and if Committee members would like to get input from their traffic engineers, then it could be discussed during the March 2004 workshop.

Chairman Fisher asked for comments from the Committee members.

Farhad Mansourian stated that he agreed with Gerry's concern and asked whether Caltrans will develop alternate language to the MUTCD for the Committee to review.

Gerry responded that he would ask his staff to work on this.

Chairman Fisher noted that the MUTCD language allows the use of LED's for word messages and symbols, even on guide signs. A local agency could install LEDs on a Yield sign. What message would motorists get if an agency placed a red LED on a "yield" sign? He suggested that California should take the lead in restricting the use of LEDs on signs.

Chairman Fisher asked for any other comments.

Gordon Skotarozyk, Tappco, stated that he requested this item to be placed on the agenda under "action items", and was surprised to see it under "discussion items." During the last CTCDC meeting, this Section was discussed and the committee decided to wait for the final language of the MUTCD. The language included in the agenda packet is the final language from the MUTCD 2003. Gordon suggested that if the Committee has concerns about the MUTCD language, they could strikeout "symbols and word messages" from Tables 2A-1 and 2A-2. By deleting symbols and word messages, the only option left for LEDs is the border of the sign. He suggested reopening the item as an action item and adopting a placement of the LEDs on a portion of sign borders.

Gerry Meis responded that it is not appropriate to change a "discussion item" to an "action item."

Chairman Fisher suggested that California should limit the use of LEDs to warning signs and the stop sign.

Gerry Meis stated that he would try to have draft language for the Committee to review and comment. It may or may not be possible for draft language to be ready by the next meeting.

Gordon asked to have final language ready for the next meeting.

Gerry stated that since our goal is to adopt the MUTCD 2003 along with the California Supplement during the next meeting, the Committee would have the final decision one way or the other.

Farhad Mansourian added that the Committee is in agreement that Caltrans will develop proposed language for review and comment.

Hamid Bahadori stated that as he reads more of the MUTCD Section, he agrees with the concerns raised by Gerry Meis and Chairman Fisher.

Jerry William, BlinkerStop, stated that the use of LEDs should be limited to the border of warning signs and the stop sign. He added that the use of LEDs as a word/symbol message could be blurry and may be hard to read. He also shared two concepts proposed in Illinois for use of detectors to activate the stop ahead and curve warning signs.

Chairman Fisher asked for other comments.

There were none.

Caltrans will work on the language and ask for review by Committee members.

04-A Left/U-Turn Traffic Signal Light Logic Improvement

Chairman Fisher asked Gerry Meis to introduce item 04-A.

Gerry Meis invited Majid Mossadeghian and asked him to share the proposal with the Committee members.

Majid used an overhead projector to present his proposal. He stated that by adding new features to existing traffic light logic it would be possible to change the left-turn and U-turn signals to green and make all other traffic signal lights red whenever the following conditions occur simultaneously:

- Vehicle(s) are stopped and waiting to make a left turn or U-turn.
- The pedestrian signal light is green on the opposite side of the intersection.
- There are no vehicle(s) crossing or waiting to cross the intersection parallel with the pedestrian-moving direction.

Majid stated that this principal could be applied at any kind of intersection with a pedestrian crosswalk signal and a left/u-turn signal light. Majid illustrated signal phasing by using the overhead projector and describing which signal would be green and which would be red.

Majid added that the problem with current traffic signal logic is that the left/U-turn signal remains red while the pedestrian crosswalk signal is green on the opposite side of the intersection, and there is no traffic crossing the intersection or waiting to cross the intersection parallel to the pedestrian-moving direction. The red light prevents traffic in the left/U-turn lane from moving through its traffic path even though it does not cross the pedestrian path.

Majid further added, by using this concept, there would be potential improvements in time saving and fuel saving, which would ultimately result in money savings.

Jacob Babico commented that the proposal would allow left/U-turn movement while all other movements would have a red signal. The current system either allows left/U-turn for the two opposing directions or split phasing system (left plus through). When the left turn movement from the opposing direction does not proceed, the through movement adjacent to the left/U-turn could assume that they have the right-of-way, which would be a conflict with the pedestrian phase.

Hamid Bahadori stated that if an agency wants to allow this type of operation there is nothing in the MUTCD or in the Traffic Manual which prohibits this.

Chairman Fisher asked Majid whether 2070 controller software or dual range timing precludes this type of option. The 2070 controller gives a number of options and it may be possible that the 2070 controller software can allow what is being proposed.

Majid stated that he is not familiar with the 2070 controller operation, since he is not a traffic engineer.

John Olejnik commented that most intersections are congested in urban areas and this concept would not be possible. John further added that visually impaired pedestrians use vehicle cues to make their move and this type of operation may lead them to make an unsafe movement.

Adjourn:

Motion: Moved by Farhad Mansourian, seconded by Merry Banks, to adjourn the meeting.

Next Meeting: The next meeting will be held on May 6, 2004 in the Marin County Civic Center, 3501 Civic Center Drive, San Rafael, CA 94913.